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10/635,991	08/07/2003	Xuguang Yang	15087US02	1584

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EXAMINER

TECKLU, ISAAC TUKU

ART UNIT

PAPER NUMBER

2192

DATE MAILED: 09/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/635,991

Applicant(s)

YANG, XUGUANG

Examiner

Isaac T. Tecklu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>05/11/04, 10/1/04</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This action is responsive to the application filed on 08/07/2003.
2. Claims 1-31 have been examined.

#### *Oath/Declaration*

3. The office acknowledges receipt of a properly signed oath/declaration filed on 08/07/2003.

#### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the penultimate bank " in line 8. There is insufficient antecedent basis for this limitation in the claim.

Claims 2-10 are rejected for dependency upon rejected base claim 1.

#### *Claim Rejections - 35 USC § 102*

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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7. Claims 1-31 are rejected under 35 U.S.C. 102(e) as being anticipated by O'Neill U.S. Patent 6,832,373 B2.

Per claim 1, O'Neill discloses a method of updating an electronic device from a first code version to a second code version according to a bank order, the electronic device having a non-volatile memory (e.g. Figure 8A and related text) comprising a reserved area and a plurality of banks containing the first code version (e.g. Figure 1A and related text), the method comprising:

moving the contents of the last bank in the bank order to the reserved area of the non-volatile memory (col. 44, line 10);

shifting the contents of each bank in the bank order to the next bank in the bank order beginning with the penultimate bank in the bank order, and proceeding in descending bank order until the contents of the first bank in the bank order has been shifted to the second bank in the bank order (e.g. Figure 13, element 1512 'MAKE NEXT BANK CURRENT BANK' and Figure 6C, element 524 and 622 and related text);

converting the contents of each bank in the bank order from the first code version to the second code version in a fault tolerant manner beginning with the second bank in the bank order (e.g. Figure 9, element 1150 and related text) and proceeding in ascending bank order until the last bank in the bank order has been converted, each converted bank being stored in the previous bank in the bank order (col. 44, lines 1-5 "... converting the contents of each of plurality of banks ..."); and

transforming the contents of the reserved area from the first code version to the second code version in a fault tolerant manner, the second code version being stored in the bank that is last in the bank order (col. 43, lines 39-41 "... transforming the old code into the new ...").

Per claim 2, O'Neill discloses the method of claim 1 wherein at least one of the moving and the shifting is performed coincident with at least one preprocessing technique (e.g. Figure 10 "bank by bank method").

Per claim 3, O'Neill discloses the method of claim 2 wherein the at least one preprocessing technique uses at least one preprocessing instruction (col. 34, lines 15-25 "... preprocessed to present the update ...") and e.g. Figure 10, element 1220 and related text).

Per claim 4, O'Neill discloses the method of claim 2 wherein the at least one preprocessing technique comprises at least one of a bubbles technique (e.g. Figure 2A and related text), a nodes technique (e.g. Figure 2B and related text), and a shift region technique (e.g. Figure 3 and related text).

Per claim 5, O'Neill discloses the method of claim 1 wherein the updating uses only two writes to each non-volatile memory location being updated (col. 16, lines 1-5 "... write current files stored in ...").

Per claim 6, O'Neill discloses the method of claim 1 further comprising: receiving an update package (col. 4, lines 15-16 "... receive the update package ...") comprising at least one of at least a preprocessing instruction, an update instruction (col. 4, lines 30-35 "... transformation instructions ..."), and a bank order specification (col. 4, lines 55-62 "... instruction set which indicates ...").

Per claim 7, O'Neill discloses the method of claim 6 wherein the receiving uses a public network (e.g. Figure 1B, element 112a and related text).

Per claim 8, O'Neill discloses the method of claim 6 wherein the receiving uses a wireless network (e.g. Figure 1B, element 112a and related text).

Per claim 9, O'Neill discloses the method of claim 1 wherein at least one of the converting and the transforming uses at least one update instruction (col. 7, lines 5-10 "... update package ... instruction set which represents ...").

Per claim 10, O'Neill discloses the method of claim 1 wherein at least one of the moving and shifting uses an offset of more than one bank (e.g. Figure 3, element 310 and Figure 4, element 343 and related text).

Per claim 11, O'Neill discloses a method of updating an electronic device, the electronic device having a non-volatile memory (e.g. Figure 8A and related text) comprising a reserved area and a plurality of banks containing a first code version (e.g. Figure 1A and related text), the method comprising:

- moving the contents of a designated bank to the reserved area of the non-volatile memory, the designated bank thereby becoming an unoccupied bank (For example col. 44, line 10);

- shifting the contents of each of the plurality of banks other than the designated bank from an original bank to an unoccupied bank in a bank by bank fashion, each original bank thereby temporarily becoming an unoccupied bank (e.g. Figure 13, element 1512 'MAKE NEXT BANK CURRENT BANK' and Figure 6C, element 524 and 622 and related text);

- converting the contents of each of the plurality of banks other than the designated bank from the first code version to a second code version in a fault tolerant manner beginning with the contents of the last bank shifted and proceeding in reverse order of the shifting (e.g. Figure 9, element 1150 and related text), the second code version of each bank being stored into the original bank from which the first code version of the bank was shifted (col. 44, lines 1-5 "... converting the contents of each of plurality of banks ..."); and

- transforming the contents of the reserved area of the non-volatile memory from the first code version to a second code version in a fault tolerant manner, the second code version being stored in the designated bank (col. 43, lines 39-41 "... transforming the old code into the new ...").

Per claim 12, O'Neill discloses the method of claim 11 wherein at least one of the moving, shifting, converting, and transforming is performed according to a specified bank order (e.g. Figure 8A, element 1010 and related text).

Per claim 13, O'Neill discloses the method of claim 11 wherein at least one of the moving and shifting further comprises preprocessing the contents of at least one of the plurality of banks (e.g. Figure 8A, element 1008 and related text).

Per claim 14, O'Neill discloses the method of claim 13 wherein the preprocessing comprises at least one of rearranging the contents of a bank, updating an address, updating a reference, and updating a branch instruction (col. 26, lines 45-50 "... arranged in a contiguous manner ... bank address, reference ...").

Per claim 15, O'Neill discloses the method of claim 13 wherein the at least one preprocessing technique comprises at least one of a bubbles technique (e.g. Figure 2A and related text), a nodes technique (e.g. Figure 2B and related text), and a shift region technique (e.g. Figure 3 and related text).

Per claim 16, O'Neill discloses the method of claim 13 wherein the preprocessing uses at least one preprocessing instruction (col. 34, lines 15-25 "... preprocessed to present the update ..." and e.g. Figure 10, element 1220 and related text).

Per claim 17, O'Neill discloses the method of claim 11 wherein at least one of the converting and transforming uses at least one update instruction (col. 7, lines 5-10 "... update package ... instruction set which represents ...").

Per claim 18, O'Neill discloses the method of claim 11 further comprising: receiving an update package (col. 4, lines 15-16 "... receive the update package ...") comprising at least one of at least a preprocessing instruction, an update instruction (col. 4, lines 30-35 "... transformation instructions ..."), and a bank order specification (col. 4, lines 55-62 "... instruction set which indicates ...").

Per claim 19, O'Neill discloses the method of claim 18 wherein the receiving uses a public network (e.g. Figure 1B, element 112a and related text).

Per claim 20, O'Neill discloses the method of claim 18 wherein the receiving uses a wireless network (e.g. Figure 1B, element 112a and related text).

Per claim 21, O'Neill discloses a method of updating an electronic device having a non-volatile memory comprising at least a first bank and a second bank, the at least a first bank and a second bank containing a first code version (e.g. Figure 1A and related text), the method comprising:

- moving the contents of the second bank to a reserve bank (col. 44, line 10);

- transferring the contents of the first bank to the second bank (col. 32, lines 42-49 "... bank transfer ..." col. 32, lines 59-65 "... the contents of the working bank are copied into the backup bank location ...");

- converting the contents of the second bank to an updated version of the first bank (col. 44, lines 1-5 "... converting the contents of each of plurality of banks ...");

- storing the converted contents of the second bank into the first bank; transforming the contents of the reserve bank into an updated version of the second bank (e.g. Figure 8A, element 1010 and related text); and

- copying the transformed contents of the reserve bank to the second bank (col. 19, lines 20-25 "... produce new code version by rearranging and copying ...").

Per claim 22, O'Neill discloses the method of claim 21 wherein at least one of the converting and the transforming uses at least one update instruction (col. 7, lines 5-10 "... update package ... instruction set which represents ...").

Per claim 23, O'Neill discloses the method of claim 21 wherein at least one of the moving and the transferring comprises preprocessing the contents of at least one of the plurality of banks (e.g. Figure 8A, element 1008 and related text).

Per claim 24, O'Neill discloses the method of claim 23 wherein the preprocessing comprises at least one of rearranging the contents of a bank, updating an address, updating a



reference, and updating a branch instruction (col. 26, lines 45-50 "... arranged in a contiguous manner ... bank address, reference ...").

Per claim 25, O'Neill discloses the method of claim 23 wherein the at least one preprocessing technique comprises at least one of a bubbles technique (e.g. Figure 2A and related text), a nodes technique (e.g. Figure 2B and related text), and a shift region technique (e.g. Figure 3 and related text).

Per claim 26, O'Neill discloses the method of claim 23 wherein the preprocessing uses at least one preprocessing instruction (col. 34, lines 15-25 "... preprocessed to present the update ..." and e.g. Figure 10, element 1220 and related text).

Per claim 27, O'Neill discloses the method of claim 21 wherein at least one of the moving, transferring, converting, storing, transforming, and copying uses a specified bank order (e.g. Figure 8A, element 1010 and related text).

Per claim 28, O'Neill discloses the method of claim 21 further comprising: receiving an update package (col. 4, lines 15-16 "... receive the update package ...") comprising at least one of at least a preprocessing instruction, an update instruction (col. 4, lines 30-35 "... transformation instructions ..."), and a bank order specification (col. 4, lines 55-62 "... instruction set which indicates ...").

Per claim 29, O'Neill discloses the method of claim 28 wherein the receiving uses a public network (e.g. Figure 1B, element 112a and related text).

Per claim 30, O'Neill discloses the method of claim 28 wherein the receiving uses a wireless network (e.g. Figure 1B, element 112a and related text).

Per claim 31, a method of updating an electronic device from a first code version to a second code version, the electronic device having a non-volatile memory comprising a plurality

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of banks containing the first code version (e.g. Figure 8A and related text), the method comprising converting the first code version to the second code version in a fault tolerant manner, wherein the method requires only two writes to each bank being updated (col. 44, lines 1-5 "... converting the contents of each of plurality of banks ...").


### *Conclusion*

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isaac T. Tecklu whose telephone number is (571) 272-7957. The examiner can normally be reached on M-TH 9:300A - 8:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Isaac Tecklu  
Art Unit 2192

  
TUAN DAM  
SUPERVISORY PATENT EXAMINER